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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,447	01/25/2002	Rolf Vollmer	VOLLMER	9680

7590 10/25/2002
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EXAMINER

AGUIRRECHEA, JAYDI A

ART UNIT PAPER NUMBER

2834

DATE MAILED: 10/25/2002

'Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/057,447

Applicant(s)

VOLLMER, ROLF

Examiner

Jaydi A. Aguirrechea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the windings must be shown on the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance. Figure 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the terminology “τsp” and “τp” is not defined in the specification.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-15 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The terms “ τ_{sp} ” and “ τ_p ” are not defined in the specification.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites the limitation "average pole pitch “ τ_{sp} ”, pole pitch width “ τ_p ” and pitch ratio “ τ_{sp}/τ_p ” and is not defined in the specification " in lines 2, 3 and 5. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-9 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wavre (US 5642013).

Wavre discloses an electric synchronous linear or rotary motor, comprising:

a stator (Figure 15) having a winding (26);

a rotor (50) having a pole pair number $2p$ with a pole pitch width τ_p ,

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permanent magnets (8) attached to the rotor arranged in a flux concentration arrangement;

wherein magnetic field lines of the permanent magnets extend essentially tangentially to the rotor, so that the magnetic field lines of the permanent magnets are concentrated in an air gap (7) between the rotor (50) and the stator (60);

wherein the permanent magnets are received in the recesses

wherein the rotor is an inner rotor (Figure 15), with the permanent magnets secured on the inner rotor by at least one element selected from the group consisting of bandage and magnetically conducting sleeve having laminated structure, wherein the element at least partially surrounds the rotor (Column 7, Lines 52-67),

wherein the element conducts the magnetic flux (Column 4, lines 7-12).

Wavre discloses the claimed invention except for the specific values of pitch ratio and the average coil width.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use this formulas, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233. The claimed formulas represent an optimum value of the pitch ratio and the average coil width.

10. With regards to claim 12, 13, Wavre discloses the claimed invention except for the specific material that the stator is made of. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the stator of materials having different magnetic conductivities since it has been held to be within the general skill of a worker in the art

to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

11. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wavre (US 5642013) as applied to claims 1-9 and 12-15 above, in view of McCarthy et al. (US 4242610) further in view of Nakagawa (US 5334894).

Wavre discloses the claimed invention except for the rotor being an outer rotor, with the permanent magnets secured on the outer rotor by one element selected from the group consisting of a sleeve and a ring, wherein the element is made of non-magnetic material.

McCarthy et al. teaches the use of a hoop (30) consisting of a high strength, non-magnetic material for the purpose of providing a retaining force over the peripheral contact with the magnets and the support members.

Nakagawa clearly suggests the use of a rotor whether inside or outside of the motor structure, as it is known in the electric motors art.

It would have been obvious to one skilled in the art at the time the invention was made to use the hoop disclosed by the combination of McCarthy and Nakagawa on the rotor structure disclosed by Wavre for the purpose of providing a retaining force over the peripheral contact with the magnets and the support members.

12. With regards to claim 11, the combination of Wavre and McCarthy discloses the claimed invention except for the non-magnetic material being aluminum. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use aluminum since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*,

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125 USPQ 416. Aluminum and copper are known as having excellent conductive and thermal properties and are considered as unreliable in terms of their magnetic properties.


Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaydi A. Aguirrechea whose telephone number is 703-305-2277. The examiner can normally be reached on M-Th 9-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JAA
October 22, 2002


KARL TAMAI
PRIMARY EXAMINER